

0 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1987:464167 CAPLUS

DOCUMENT NUMBER: 107:64167

TITLE: Pretreatment of pectic wastewater from orange canning process by an **alkalophilic Bacillus**

^{sp}
AUTHOR(S): Tanabe, Hiroyuki; Yoshihara, Kazutoshi; Tamura, Keiko;

Kobayashi, Yoshinari; Akamatsu, Isao; Niyomwan, Naiyana; Footrakul, Praphaisri

CORPORATE SOURCE: Gov. Ind. Res. Inst., Takamatsu, 761, Japan

SOURCE: J. Ferment. Technol. (1987), 65(2), 243-6

CODEN: JFTED8; ISSN: 0385-6380

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 60-1 (Waste Treatment and Disposal)

Section cross-reference(s): 17

ABSTRACT:

An **alkalophilic** bacteria that secretes endo-pectate lyase was isolated from soil in Thailand and identified as a *Bacillus* species. The strain, designated as GIR 621, was applied to the pretreatment of pectic wastewater from orange-canning factories prior to treatment by the activated-sludge process. The pretreatment decreased the uronic acid of the wastewater by 91%, when supplemented with Polypepton, yeast ext., soybean powder, P and K (pH 10.0) for 36 h. The strain did not grow on simple synthetic media or under nonalkaline conditions, therefore the use of the potential phytopathogen should not involve biohazards.

SUPPL. TERM: orange canning wastewater biotreatment; pectic wastewater

L19 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1999:122925 CAPLUS

DOCUMENT NUMBER: 130:226969

TITLE: Thermophilic aerobic biological **wastewater treatment**

AUTHOR(S): Lapara, Timothy M.; Alleman, James E.

CORPORATE SOURCE: Environmental and Hydraulic Engineering Area, School of Civil Engineering, Purdue University, West Lafayette, IN, 47907-1284, USA

SOURCE: Water Res. (1999), 33(4), 895-908

CODEN: WATRAG; ISSN: 0043-1354

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A **review**, with many refs., is given. The advantages of thermophilic aerobic biol. **wastewater treatment** include rapid biodegrdn. rates, low sludge yields, and excellent process stability. Substrate utilization rates reported in the tech. literature are 3-10 times greater than that obsd. with analogous mesophilic processes, and sludge prodn. rates are generally similar to anaerobic treatment processes. As such, thermophilic aerobic treatment has been used to biodegrade wastewaters from the pulp and paper industry, livestock prodn., and many other misc. waste streams. Thermophilic aerobic processes are particularly advantageous for the treatment of high-strength wastewaters that can fully benefit from the rapid biodegrdn. rates and low sludge yields. High-strength wastewaters also contain the necessary energy content to facilitate autothermal operation such that exogenous heat input is not required. A theor. energy balance is presented which predicts that COD removals of 20,000-40,000 mg/L coupled with an O transfer efficiency of 10-20% are necessary for autoheating to thermophilic temps. Of the bacteria likely to proliferate in thermophilic aerobic bioreactors, relatively unique and specific nutritional

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L10 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1988:534434 CAPLUS

DOCUMENT NUMBER: 109:134434

TITLE: Biotreatment of pectic wastewater. Part IV.
Pretreatment of pectic wastewater with pectate lyase
from an **alkalophilic Bacillus**

AUTHOR(S): ^{sp} Tanabe, Hiroyuki; Kobayashi, Yoshinari; Akamatsu,
Isao

CORPORATE SOURCE: Gov. Ind. Res. Inst., Shikoku, Takamatsu, 761, Japan

SOURCE: Agric. Biol. Chem. (1988), 52(7), 1855-6

CODEN: ABCHA6; ISSN: 0002-1369

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 60-1 (Waste Treatment and Disposal)

. Section cross-reference(s): 7, 10, 17

ABSTRACT:

The pretreatment of pectic wastewater with *Bacillus* mutations resulted in COD and uronic acid removal efficiencies of 15 and 93%, resp., in 20 h. The prodn.

of endo-pectate lyase reached a max. of 65 units/mL 12 h after the start of the treatment.

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L13 ANSWER 1 OF 76 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1999:427217 BIOSIS

DOCUMENT NUMBER: PREV199900427217

TITLE: Decolorization of molasses wastewater by **Bacillus**

sp. under thermophilic and anaerobic conditions.

AUTHOR(S): Nakajima-Kambe, Toshiaki; Shimomura, Mifumi; Nomura, Nobuhiko; Chanpornpong, Thalerng; Nakahara, Tadaatsu (1)

CORPORATE SOURCE: (1) Institute of Applied Biochemistry, University of Tsukuba, Tsukuba, Ibaraki, 305-8572 Japan

SOURCE: Journal of Bioscience and Bioengineering, (Jan., 1999)
Vol.

87, No. 1, pp. 119-121.

ISSN: 1389-1723.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Various microorganisms were screened for their ability to decolorize molasses wastewater under thermophilic and anaerobic conditions. Strain MD-32, which was newly isolated from a soil sample, was selected as the best strain. From taxonomical studies, the strain was concluded to belong to the genus **Bacillus**, most closely resembling *B. smithii*. The strain decolorized 35.5% of molasses pigment within 20 d at 55degreeC under anaerobic conditions, but no decolorization activity was observed when it was cultivated aerobically. At all the concentrations tested molasses pigment was effectively decolorized by MD-32, with decolorization

yields of around 15% within 2 d. The molecular weight distribution as determined by gel filtration chromatography revealed that the decolorization of molasses pigment by the isolated strain is accompanied by a decrease in not only small molecules but also large ones.

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ANSWER 5 OF 16 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:4707 BIOSIS
DOCUMENT NUMBER: PREV199800004707
TITLE: Survival and activity of Comamonas testosteroni in mixed
population.
AUTHOR(S): Bokhamy, Meriem (1); Deront, Marc; Adler, Nevenka;
Peringer, Paul
CORPORATE SOURCE: (1) Bioeng. Lab., Swiss Federal Inst. Technol., EPFL,
CH-1015 Lausanne Switzerland
SOURCE: Water Research, (Nov., 1997) Vol. 31, No. 11, pp.
2802-2810.
ISSN: 0043-1354.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English; French
AB Inoculating specialized microorganisms directly into the mixed microbial
flora in **wastewater treatment** processes is the most
simple and economic way to use their abilities (Fujita and Ike, 1994).
However, success or failure of a bioaugmentation depends on two
conditions: the survival of the microbe and the demonstration of its
degradative activity (Stephenson and Stephenson, 1992). Specialized
bacteria which exhibit extremely high degradation activities of
xenobiotic
compounds may be suitable for use in this way, since the degradation rate
can be enhanced even if the strain maintain relatively low populations in
the processes. For that purpose, the survival of a naturally occurring
microorganism, Comamonas testosteroni T-2, in activated sludge microcosms
was investigated. This bacterium was able to mineralize completely
p-toluene sulfonate (p

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